ProCurve MSM3xx / MSM4xx Access Points

CLI Reference Guide

HP ProCurve
MSM3xx / MSM4xx Access Points

CLI Reference Guide

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Applicable Products

	USA part	WW part
MSM310 Access Point	J9374A	J9379A
MSM310-R Access Point	J9380A	J9383A
MSM320 Access Point	J9360A	J9364A
MSM320-R Access Point	J9365A	J9368A
MSM325 Access Point with Sensor	J9369A	J9373A
MSM335 Access Point with Sensor	J9356A	J9357A
MSM410 Access Point	J9426A	J9427A
MSM422 Access Point	J9358A	J9359A

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In this Contents section, new to 5.3.x contexts and commands are preceded with an asterisk "*" and formatted in green like this:

* new context
    * new command

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Alphabetical list of commands

In this alphabetical list, new to 5.3.x commands are preceded by an asterisk "*" and formatted in green like this:

* command 2-xxx

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Introduction

Contents

About this guide

This guide explains how to work with the Command Line Interface (CLI) on HP ProCurve Networking MSM3xx and MSM4xx APs.

Products covered

This guide covers the following products:

Model	Part number	
	USA version	**Worldwide version**
MSM310 Access Point	J9374A	J9379A
MSM310-R Access Point	J9380A	J9383A
MSM320 Access Point	J9360A	J9364A
MSM320-R Access Point	J9365A	J9368A
MSM325 Access Point with Sensor	J9369A	J9373A
MSM335 Access Point with Sensor	J9356A	J9357A
MSM410 Access Point	J9426A	J9427A
MSM422 Access Point	J9358A	J9359A

HP ProCurve Product Naming

As of October 1st, 2008, Colubris Networks was acquired by HP ProCurve. HP ProCurve has begun integrating the Colubris product line into the HP ProCurve Networking product portfolio (www.procurve.com/news/colubris-10-01-08.htm).

In the online help and this manual, Colubris product names have been changed to their equivalent HP ProCurve product names.

Note

SOAP and SNMP MIBs retain the Colubris naming so you do not need to change your existing SOAP and MIB usage.

The Colubris Networks product names and their corresponding new HP ProCurve product names are as follows:

Colubris name	HP ProCurve name
MSC-5100 MultiService Controller	MSM710 Controller
MSC-5200 MultiService Controller	MSM730 Controller
MSC-5500 MultiService Controller	MSM750 Controller

Colubris name	HP ProCurve name
MAP-320 MultiService Access Point	MSM310 Access Point
MAP-320R MultiService Access Point	MSM310-R Access Point
MAP-330 MultiService Access Point	MSM320 Access Point
MAP-330R MultiService Access Point	MSM320-R Access Point
MAP-330 AP+Sensor MultiService Access Point	MSM325 Access Point with Sensor
MAP-625 MultiService Access Point	MSM422 Access Point
MAP-630 AP+Sensor MultiService Access Point	MSM335 Access Point with Sensor
WCB-200 Wireless Client Bridge	M111 Client Bridge
Visitor Management Tool	Guest Management Software
RF Manager 1500 Enterprise	RF Manager 100 IDS/IPS system
RF Manager 1300 Basic	RF Manager 50 IDS/IPS system
RF Planner	RF Planner

Important terms

The following terms are used in this guide.

Term	Description
AP	Refers to any HP ProCurve Networking MSM3xx or MSM4xx Access Point.
service controller	Refers to any HP ProCurve Networking MSM7xx Controller, including both Access Controller and Mobility Controller variants.
VSC, Virtual ap, VAP	These terms are used interchangeably to refer to VSC (Virtual Service Community).

Typographical conventions

Command syntax

Command syntax is formatted in a monospaced font as follows:

Example	Description
`web admin kickout`	Items in plain text must be entered as shown.
`ip http port <number>`	Items in italics and enclosed in < > are parameters for which you must supply a value. In this example, you must supply a value for <*number*>.

Example	Description
`end [force]`	Items enclosed in square brackets are optional. You can either include them or not. Do not include the brackets. In this example you can either include “force” or omit it.
`firewall mode (high|low|none)`	Items enclosed in parenthesis and separated by a vertical line indicate a choice. Specify only one of the items. In this example, you must specify ’high’, ’low’, or ’none’.

Management tool

When referring to the management tool interface, the Main menu name is presented first followed by a right angle-bracket and then the sub-menu name, as in **Network > Ports**.

HP ProCurve Networking support

HP ProCurve Networking offers support 24 hours a day, seven days a week through a number of automated electronic services. See the Customer Support/Warranty booklet included with your product.

The HP ProCurve Networking Web site, **www.procurve.com/customercare** provides up-to-date support information.

Additionally, your HP-authorized network reseller can provide you with assistance, both with services that they offer and with services offered by HP.

Before contacting support

To make the support process most efficient, before calling your networking dealer or HP Support, you first should collect the following information:

Collect this information	Where to find it
Product identification.	On the rear of the product.
Software version.	The service controller management tool **Login** page.
Network topology map, including the addresses assigned to all relevant devices.	Your network administrator.

Online documentation

For the latest documentation, visit the HP ProCurve Networking manuals Web page at: **www.procurve.com/manuals**.

CLI support in autonomous and controlled modes

An AP operates in either controlled mode or autonomous mode.

Controlled mode

Controlled mode is the factory default mode for all APs.

When in controlled mode, an AP establishes a control channel with a service controller. The service controller manages the AP and provides all configuration settings. Discovery of the service controller is automatic if default settings are used on all devices.

Note

In controlled mode, access to the CLI is possible only before any control channel is established, which can occur in the following scenarios:

- Network failures prevent a control channel from being created.
- After an AP is restarted, prior to establishment of the control channel (during the brief service controller discovery process).

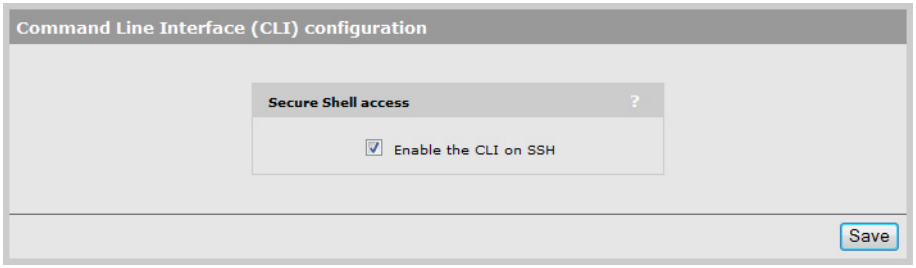
When the AP is in controlled mode, a reduced number of CLI commands are available. The most notable command is **switch operational mode**, which enables you to switch the AP to autonomous mode. The config context is not available.

Autonomous mode

When in autonomous mode, the AP operates as a stand-alone unit. You can configure and manage the AP using the AP management tool, SNMP, CLI, or SOAP. Autonomous mode supports all CLI commands.

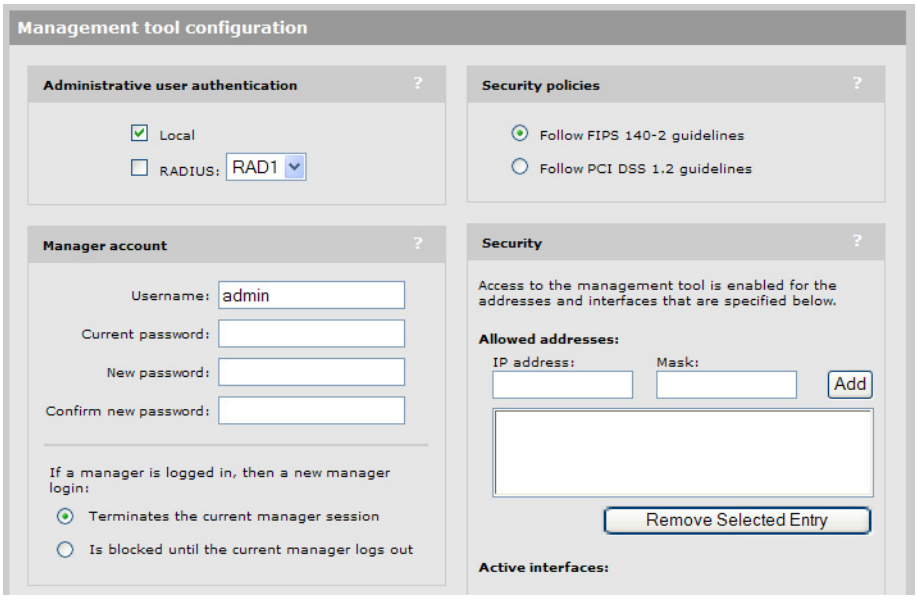
Configuring CLI support

Using the AP management tool, open the page **Management > CLI**. Use this page to enable/disable CLI support via an SSH or serial connection. A maximum of three concurrent CLI sessions are supported regardless of the connection type.



The CLI supports SSH on the standard TCP port (22).

Connectivity and login credentials for SSH connections use the same settings as defined for the management tool manager on the **Management > Management tool** page.



- SSH connections to the CLI can be made on any active interface. Support for each interface must be explicitly enabled under **Security.**
- The login credentials for SSH connections are the same as those defined under **Manager account**. By default, both username and password are set to **admin**.

Note

SSH logins always use the local manager username and password, even if **Administrative user authentication** is set to use a RADIUS server.

SSH client support

The following SSH clients have been tested with the CLI. Others may work as well:

- OpenSSH
- Tectia
- SecureCRT
- Putty

Entering strings

When entering a value that contains spaces, you must enclose it in quotation marks. For example, if the command syntax is:

```
ssid <name>
```

you must specify one of the following:

```
ssid ANameWithNoSpaces
ssid "A name with spaces"
```

Context hierarchy

CLI commands are grouped into functional contexts. The following table shows the context hierarchy and the command used to switch from the parent context.

Context hierarchy	Command to switch from parent context
View context	*(This is the first context. No command is needed.)*
Enable context	enable
Config context	config
WAN IP interface context	interface ip
Port-2 interface context	interface ethernet *port-2*
VLAN interface context	interface vlan <*id*>[-<*id2*>]
Port-1 interface context	interface ethernet port-1
VLAN interface context	interface vlan <*id*>[-<*id2*>]
Wireless context	interface wireless <*number*>
Local mesh context	local mesh profile <*name*>
VLAN interface context	interface vlan <*number*>
GRE interface context	interface gre <*name*>
Virtual AP context	virtual ap <*name*>
Syslog destination context	logging destination <*name*>
SNMP user context	snmp-server user <*name*>
SNMP notification receiver context	snmp-server notification receiver <*host*>
RADIUS context	radius-server profile <*name*>
IP_QOS context	ip-qos profile <*name*>

Sample CLI session

This sample CLI session shows you how to set the wireless port to support 802.11a on channel 60 with medium distance between access points. (The CLI prompt is shown in bold.)

```
CLI> enable
CLI# config
CLI(config)# interface wireless
CLI(config-if-wlan)# dot11 a 60
CLI(config-if-wlan)# distance medium
CLI(config-if-wlan)# end
CLI(config)# end
CLI# quit
```

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CLI commands

View context

Path: View

This is the root of the command tree.

arping

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

`arping [ -AbDfhqUV] [ -c <count>] [ -w <deadline>] [ -s <source>] -I <interface> <destination>`

Pings a destination on a device interface using ARP packets.

enable

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

`enable`

Switches to the enable context.

iperf

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

`iperf -c host [-t time]`

Runs a performance throughput test.

Parameters

<-c host>	The IP address or DNS name of the iperf server to connect to.
<-t length>	Length of the throughput test in seconds.

nslookup

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

`nslookup [ -option authentication ] [ <host-to-find> | - [< server> ]]`

Queries DNS servers for information on hosts or domains.

ping

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

`ping <host> [-c <count>] [-s <length>] [-q]`

Determines if the specified remote IP address is active.

Parameters

<-c host>	The IP address or DNS name of the host to ping.
<-c count>	Number of pings.
<-s length>	Length of the ping datagram.
<-q>	Quiet mode. No output.

ps

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

```
ps
```

Displays all running processes.

quit

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

```
quit
```

Quits the CLI.

show license

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

```
show license (eula | gpl | other)
```

Displays license information.

show logging filtered

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

```
show logging [filtered]
```

Displays the system log.

top

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

```
top
```

Displays all running processes.

traceroute

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

```
traceroute [-n] [-r] [-v] [-m <max_ttl>] [-p <port#>] [-q <nqueries>] [-s
<src_addr>] [-t <tos>] [-w <wait>] <host> [<data size>]
```

Show the hosts that are traversed to reach the specified IP address.

Enable context

Path: View > Enable

This context provides access to various utilities.

reboot device

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

```
reboot device
```

Restarts the system.

show certificate

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

```
show certificate
```

Display current certificates.

show certificate binding

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

```
show certificate binding
```

Display how the certificates are used.

iperf

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

```
iperf -c host [-t time]
```

Runs a performance throughput test.

Parameters

<-c host>	The IP address or DNS name of the iperf server to connect to.
<-t length>	Length of the throughput test in seconds.

ping

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

```
ping <host> [-c <count>] [-s <length>] [-q]
```

Determines if the specified remote IP address is active.

Parameters

<-c host>	The IP address or DNS name of the host to ping.
<-c count>	Number of pings.
<-s length>	Length of the ping datagram.
<-q>	Quiet mode. No output.

arping

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

`arping [ -AbDfhqUV] [ -c <count>] [ -w <deadline>] [ -s <source>] -I <interface> <destination>`

Pings a destination on a device interface using ARP packets.

arp

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

`arp [-evn] [-H <type>] [-i if] ?- [<hostname>] arp [-v] [-i if] -d <hostname> [pub] arp [-v] [-H <type>] [-i if] -s <hostname> <hw_addr> [temp] arp [-v] [-H <type>] [-i if] -s <hostname> <hw_addr> [<netmask> <nm>] <pub> arp [-v] [-H <type>] [-i if] -Ds <hostname> ifa [<netmask> <nm>] <pub>`

Displays and modifies the Internet-to-Ethernet address translation tables used by the address resolution protocol.

end

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

`end`

Switches to parent context.

quit

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

`quit`

Exit the enable context.

rcapture

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

`rcapture [<a>] [<b>] [<c>] [<d>] [<e>] [<f>] [<g>] [<h>]`

Sends port capture to an FTP server.

Refer to Linux documentation for a complete description of this command and its options.

show arp

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

`show arp`

Show the ARP table.

show bridge

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

`show bridge`

Show bridge information.

show bridge forwarding

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

```
show bridge forwarding
```

Show bridge forwarding information.

show dns cache

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

```
show dns cache [<serial>]
```

Show DNS cache entries. Specify a serial number to display detailed information.

show interfaces

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

```
show interfaces
```

Show networking interfaces.

show ip

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

```
show ip
```

Show all IP addresses, mask, MTU, and MAC addresses.

show ip route

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

```
show ip route
```

Show all IP routes.

show system info

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

```
show system info
```

Show basic system information.

factory reset

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

```
factory reset
```

Resets the unit to factory default settings.

switch operational mode

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

```
switch operational mode
```

Switches the unit operational mode.

show dot11 associations

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

```
show dot11 associations
```

Show all current wireless associations.

show dot11 statistics client-traffic

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

```
show dot11 statistics client-traffic
```

Show current client matrix statistics.

show local mesh

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

```
show local mesh
```

Show current local mesh interfaces.

show wireless neighborhood

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

```
show wireless neighborhood
```

Show all access points detected nearby.

show wireless rogue-ap

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

```
show wireless rogue-ap
```

Show all rogue access points detected nearby.

show client log

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

```
show client log [<macaddr>]
```

Display client station log. Enter the MAC address to display more details for a specific client station.

show discrete pin

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

```
show discrete pin
```

Display the state of the discrete pin.

config

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

```
config
```

Switches to the config context.

show all config

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

```
show all config
```

Print all configuration that applies to this device.

Config context

Path: View > Enable > Config

This is the root context for all configuration commands.

certificate

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

`certificate (authority | local) <uri> <certname> [<password>]`

Add a new certificate to the store, using the friendly name.

certificate binding

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

`certificate binding (web-management | html-auth | soap | eap) <certname>`

Assign a certificate to a service.

`no certificate binding (web-management | html-auth | soap | eap) <certname>`

Unassign a certificate from a service.

certificate revocation

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

`certificate revocation <uri> <certname>`

Add a Certificate Revocation List to an existing authority certificate.

end

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

`end`

Switches to parent context.

factory settings

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

`factory settings`

Resets the system configuration to factory default settings.

interface ethernet

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

`interface ethernet (port-1|port-2)`

Switches to the specified Ethernet interface context.

reboot device

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

```
reboot device
```

Restarts the system.

show certificate

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

```
show certificate
```

Display current certificates.

show certificate binding

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

```
show certificate binding
```

Display how the certificates are used.

show config factory

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

```
show config [factory]
```

Generates a list of CLI commands that can be used to define the currently loaded configuration.

username

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

```
username <user> <password>
```

Changes the current administrator username and password.

Parameters

<user>	New administrator username.
<password>	New administrator password.

interface ip

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

```
interface ip
```

Switches to the specified IP interface context.

interface wireless

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

```
interface wireless <interface number>
```

Switches to the specified wireless interface context.

local mesh profile

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

`local mesh link <name>`

Switches to the specified local mesh link context.

Parameters

<name>	Number of the local mesh link to configure.

interface gre

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

`interface gre <name>`

Switches to the specified GRE interface or creates a new GRE interface with the specified name.

`no interface gre <name>`

Deletes the specified GRE interface.

virtual ap

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

`virtual ap <name>`

Creates a new VAP (VSC) profile or switches to the existing VAP (VSC) context with the specified name.

`no virtual ap <name>`

Deletes the specified Virtual AP profile.

Parameters

`name`	Name of an existing or new VAP (VSC) profile.

admin local authentication

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

`admin local authentication`

Enable the authentication of administrator logins to occur using local account.

`no admin local authentication`

Disable administrator authentication via local account.

admin radius authentication

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

`admin radius authentication`

Sets the authentication of administrator logins to occur using RADIUS.

`no admin radius authentication`

Disable administrator authentication via RADIUS.

admin radius authentication server

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

`admin radius authentication server <name>`

Sets the authentication of administrator logins to occur using RADIUS.

ip http port

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

`ip http port <number>`

Sets the port number to use for HTTP access to the AP.

Parameters

<number> Port number. Range: 1 - 65535.

Description

HTTP connections made to this port are met with a warning and the browser is redirected to the secure web server port. By default. this parameter is set to port 80.

ip https port

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

`ip https port <number>`

Sets the port number used for HTTPS access to the AP.

Parameters

<number> Port number. Range: 1 - 65535.

snmp-server trap certificate-expired

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

`snmp-server trap certificate-expired`

Send a trap when the SSL certificate has expired. A trap is sent every 12 hours.

`no snmp-server trap certificate-expired`

Do not send a trap when the SSL certificate has expired.

snmp-server trap certificate-expires-soon

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

`snmp-server trap certificate-expires-soon`

Send a trap when the SSL certificate is about to expire. A trap is sent every 12 hours starting 15 days before the certificate expires.

`no snmp-server trap certificate-expires-soon`

Do not send a trap when the SSL certificate is about to expire.

snmp-server trap web-fail

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

```
snmp-server trap web-fail
```

Send a trap each time an administrator login is refused.

```
no snmp-server trap web-fail
```

Do not send a trap each time an administrator login is refused.

snmp-server trap web-login

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

```
snmp-server trap web-login
```

Send a trap each time an administrator login is accepted.

```
no snmp-server trap web-login
```

Do not send a trap each time an administrator login is accepted.

snmp-server trap web-logout

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

```
snmp-server trap web-logout
```

Send a trap each time an administrator logs out.

```
no snmp-server trap web-logout
```

Do not send a trap each time an administrator logs out.

web admin kickout

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

```
web admin kickout
```

Enables a new administrator login to terminate an existing administrator session.

```
no web admin kickout
```

Stops a new administrator from logging in until an existing administrator logs out.

web allow

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

```
web allow <ip address>/<mask>
```

Adds an address to the list of hosts that can access the management tool.

```
no web allow <ip address>/<mask>
```

Removes the specified address from the list of hosts that can access the management tool.

Parameters

<address>	IP address.
</mask>	Subnet mask in CIDR format. Specifies the number of bits in the mask.

world-mode dot11 country code

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

`world-mode dot11 country code <code>`

Specifies the country the AP is operating in.

Parameters

<code>	An ISO3166 three-letter country code.

web access port-1

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

`web access port-1`

Enables access to the management tool via Port-2.

`no web access port-1`

Blocks access to the management tool via Port-2.

web access port-2

Supported on: MSM310 MSM320

`web access port-2`

Enables access to the management tool via Port-1.

`no web access port-2`

Blocks access to the management tool via Port-1.

web access wireless

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

`web access wireless`

Enables access to the management tool via the wireless port.

`no web access wireless`

Blocks access to the management tool via the wireless port.

web access interface vlan

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

`web access interface vlan <name>`

Enables access to the management tool via the specified VLAN.

`no web access interface vlan <name>`

Removes access to the management tool for the specified VLAN.

web access interface gre

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

`web access interface gre <name>`

Enables access to the management tool via the specified GRE tunnel.

`no web access interface gre <name>`

Disables access to the management tool via the specified GRE tunnel.

web access local mesh

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

`web access local mesh <name>`

Enables access to the management tool via the specified local mesh.

`no web access local mesh <name>`

Disables access to the management tool via the specified local mesh.

clock

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

`clock <time> <date>`

Sets the system time and date.

Parameters

<time>	Time as hh:mm:ss. For example: 15:44:00.
<date>	Date as dd Month yyyy. For example: 17 Oct 2004.

clock auto adjust dst

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

`clock auto adjust dst`

Automatically adjust clock for daylight savings changes.

`no clock auto adjust dst`

Do not automatically adjust clock for daylight savings changes.

clock timezone

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

`clock timezone <gmtdiff>`

Sets the time zone the AP is operating in.

Parameters

<gmtdiff>	Offset from GMT as follows: +-HOUR:MIN. For example, Eastern Standard time is -5:00.

clock use custom dst rules

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

`clock use custom dst rules`

Use custom DST rules instead of default ones.

`no clock use custom dst rules`

Do not use custom DST rules, use default ones.

ntp protocol

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

```
ntp protocol (ntp | sntp)
```

Sets the network time protocol to use.

ntp server

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

```
ntp server
```

Enable this option to have the AP periodically contact a network time server to update its internal clock.

```
no ntp server
```

Disables the use of a network time server.

clock custom dst begins

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

```
clock custom dst begins <day> <weekday> <month> <time>
```

Set parameters of the rule defining the beginning of daylight savings time.

Parameters

<day>	Day of the month. Range 1 - 31.
<weekday>	Weekday. Valid values are: "sun", "mon", "tue", "wed", "thu", "fri", "sat".
<month>	Month. Valid values are: "jan", "feb", "mar", "apr", "may", "jun", "jul", "aug", "sep", "oct", "nov", "dec".
<time>	Time as hh:mm[:ss]. For example: 15:44:00.

If a parameter does not apply to the configured DST rule format, simply set this parameter to any valid value.

clock custom dst begins format

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

```
clock custom dst begins format (fixed | last-weekday | following-date |
preceding-date)
```

Set the format of the custom DST rule.

Parameters

<fixed>	Rule of the form: The [Day]th of [Month] at [Time].
<last-weekday>	Rule of the form: The last [Weekday] of [Month] at [Time].
<following-date>	Rule of the form: The first [Weekday] on or after the [Day]th of [Month] at [Time].
<preceding-date>	Rule of the form: The first [Weekday] on or before the [Day]th of [Month] at [Time].

clock custom dst ends

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

`clock custom dst end <day> <weekday> <month> <time>`

Set parameters of the rule defining the end of daylight savings time.

Parameters

<day>	Day of the month. Range 1 - 31.
<weekday>	Weekday. Valid values are: "sun", "mon", "tue", "wed", "thu", "fri", "sat".
<month>	Month. Valid values are: "jan", "feb", "mar", "apr", "may", "jun", "jul", "aug", "sep", "oct", "nov", "dec".
<time>	Time as hh:mm[:ss]. For example: 15:44:00.

If a parameter does not apply to the configured DST rule format, simply set this parameter to any valid value.

clock custom dst ends format

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

`clock custom dst ends format (fixed | last-weekday | following-date | preceding-date)`

Set the format of the custom DST rule.

Parameters

<fixed>	Rule of the form: The [Day]th of [Month] at [Time].
<last-weekday>	Rule of the form: The last [Weekday] of [Month] at [Time].
<following-date>	Rule of the form: The first [Weekday] on or after the [Day]th of [Month] at [Time].
<preceding-date>	Rule of the form: The first [Weekday] on or before the [Day]th of [Month] at [Time].

ntp server

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

`ntp server <index><host>`

Adds a network time server.

Parameters

<index>	Index of the time server in the list. Up to 20 time servers are supported. Time servers are checked in the order that they appear in the list.
<host>	DNS name or IP address of the time server.

ntp server failure trap

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

`ntp server failure trap`

Send a trap each time a time server synchronization failed.

`no ntp server failure trap`

Do not send a trap each time a time server synchronization failed.

config-update automatic

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

```
config-update automatic
```

Enables scheduled configuration restore or backup.

```
no config-update automatic
```

Disables scheduled configuration restore or backup.

The AP can automatically download the configuration file from a local or remote URL (restore). It is also possible to upload the current configuration to a given URL (backup). Theses operations can be done at preset times.

config-update operation

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

```
config-update operation (restore | backup)
```

Sets the type of operation that will take place at the preset time.

config-update time

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

```
config-update time <time>
```

Sets the time of day when the scheduled configuration operation (backup or restore) will take place.

Parameters

<time>	Time as hh:mm:ss. For example: 15:44:00.

config-update uri

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

```
config-update uri <uri>
```

Sets the URI where the AP will download or upload the configuration file.

```
no config-update uri
```

Clears the configuration file URI.

config-update weekday

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

```
config-update weekday (everyday | monday | tuesday | wednesday | thursday |
friday | saturday | sunday)
```

Sets the day when the scheduled configuration operation (backup or restore) will take place.

snmp-server trap config-change

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

```
snmp-server trap config-change
```

Send a trap whenever the configuration is changed.

```
no snmp-server trap config-change
```

Do not send this trap.

snmp-server trap config-update

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

```
snmp-server trap config-update
```

Send a trap whenever the firmware is updated.

```
no snmp-server trap config-update
```

Do not send this trap.

logging destination

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

```
logging destination <name>
```

Creates a new remote destination for syslog.

```
no logging destination <name>
```

Deletes the specified syslog destination.

Parameters

<name>	Name of syslog destination. Use the name "local" to edit your local log file settings. Any other name will edit/create a remote log destination.

snmp-server trap syslog-severity

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

```
snmp-server trap syslog-severity
```

Set the severity level of syslog messages that will trigger a trap.

```
no snmp-server trap syslog-severity
```

Do not send this trap.

snmp-server

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

```
snmp-server
```

Enables the SNMP agent.

```
no snmp-server
```

Disables the SNMP agent.

snmp-server access port-1

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

```
snmp-server access port-1
```

Enables SNMP access on the downstream port.

```
no snmp-server access port-1
```

Blocks SNMP access on the downstream port.

snmp-server allow

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

`snmp-server allow <ip address>/<mask>`

Adds a host to the list of IP address from which access to the SNMP interface is permitted.

`no snmp-server allow <ip address>/<mask>`

Removes a host from the list of IP address from which access to the SNMP interface is permitted.

Parameters

<address>	IP address.
</mask>	Subnet mask in CIDR format. Specifies the number of bits in the mask.

snmp-server chassis-id

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

`snmp-server chassis-id <name>`

Specifies a name to identify the AP. By default, this is set to the serial number of the AP.

`no snmp-server chassis-id`

Deletes the system name.

snmp-server contact

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

`snmp-server contact <email>`

Specifies contact information.

`no snmp-server contact`

Deletes contact information.

Parameters

<email>	Email address.

snmp-server heartbeat period

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

`snmp-server heartbeat period <seconds>`

Sets the interval between sending heartbeat traps.

Parameters

<seconds>	Heartbeat interval in seconds.

snmp-server location

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

`snmp-server location <name>`

Specifies the location where the AP is installed.

`no snmp-server location`

Deletes location information.

Parameters

<name> Location where the AP is installed.

snmp-server port

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

`snmp-server port <port number>`

Sets the port the AP will use to respond to SNMP requests.

Parameters

<port number> SNMP port number. Range 1 - 65535.

snmp-server readonly

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

`snmp-server readonly <community>`

Sets the read-only community string.

`no snmp-server readonly`

Deletes the read-only community string.

snmp-server readwrite

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

`snmp-server readwrite <community>`

Sets the read-write community string.

`no snmp-server readwrite`

Deletes the read-write community string.

snmp-server trap

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

`snmp-server trap`

Enables support for SNMP traps.

`no snmp-server trap`

Disables support for SNMP traps.

snmp-server trap community

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

`snmp-server trap community <str>`

Sets the password required by the remote host that will receive the trap.

`no snmp-server trap community`

Deletes the password required by the remote host that will receive the trap.

snmp-server trap destination

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

`snmp-server trap destination <host> <[port number]>`

Add a new trap destination.

`no snmp-server trap destination <host> [<port>]`

Deletes the specified trap destination.

Parameters

<host>	Sets the IP address or domain name of the host that the AP will send traps to.
<[port number]>	SNMP port number. Range 1 - 65535. By default port 162 is used

snmp-server trap heartbeat

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

`snmp-server trap heartbeat`

Enables sending of heartbeat traps at regular intervals.

`no snmp-server trap heartbeat`

Disables sending of heartbeat traps at regular intervals.

snmp-server trap link-state

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

`snmp-server trap link-state`

Send a trap when the link state changes on any interface.

`no snmp-server trap link-state`

Do not send this trap.

snmp-server trap snmp-authentication

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

`snmp-server trap snmp-authentication`

Send a trap each time an SNMP request fails to supply the correct community name.

snmp-server version 1

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

`snmp-server version 1`

Enable version 1

`no snmp-server version 1`

Disable version 1

snmp-server version 2c

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

`snmp-server version 2c`

Enable version 2c

`no snmp-server version 2c`

Disable version 2c

snmp-server version 3

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

`snmp-server version 3`

Enable version 3

`no snmp-server version 3`

Disable version 3

snmp-server access interface vlan

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

`snmp-server access interface vlan <name>`

Enables access to SNMP via the specified VLAN.

`no snmp-server access interface vlan <name>`

Disables access to SNMP via the specified VLAN.

Parameters

<name>	Specifies the name of the VLAN.

snmp-server access local mesh

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

`snmp-server access local mesh <profile>`

Enables access to SNMP via the specified local mesh.

`no snmp-server access local mesh <profile>`

Enables access to SNMP via the specified local mesh.

snmp-server access interface gre

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

`snmp-server access interface gre <name>`

Enables access to SNMP via the specified GRE tunnel.

`no snmp-server access interface gre <name>`

Removes access to SNMP via the specified GRE tunnel.

snmp-server access wireless

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

```
snmp-server access wireless
```

Enables SNMP access on the wireless port.

```
no snmp-server access wireless
```

Blocks SNMP access on the wireless port.

snmp-server access port-2

Supported on: MSM310 MSM320

```
snmp-server access port-2
```

Enables SNMP access on the upstream port.

```
no snmp-server access port-2
```

Blocks SNMP access on the upstream port.

snmp-server user

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

```
snmp-server user <name>
```

Creates a new SNMP user or switches to the SNMP user context with the specified user name.

```
no snmp-server user <name>
```

Deletes the specified SNMP user.

snmp-server notification receiver

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

```
snmp-server notification receiver <host>
```

Creates a new SNMP notification receiver or switches to the SNMP notification receiver context with the specified IP address.

```
no snmp-server notification receiver <host>
```

Deletes the specified SNMP notification receiver.

soap-server

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

```
soap-server
```

Enables the SOAP server.

```
no soap-server
```

Disables the SOAP server.

soap-server access interface vlan

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

`soap-server access interface vlan <name>`

Enables access to SOAP via this VLAN.

`no soap-server access interface vlan <name>`

Disables access to SOAP via this VLAN.

soap-server access port-1

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

`soap-server access port-1`

Enables SOAP access on the downstream port.

`no soap-server access port-1`

Blocks SOAP access on the downstream port.

soap-server access port-2

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

`soap-server access port-2`

Enables SOAP access on the upstream port.

`no soap-server access port-2`

Blocks SOAP access on the upstream port.

soap-server allow

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

`soap-server allow <ip address>/<mask>`

Adds a host to the list of IP address from which access to the SOAP interface is permitted.

`no soap-server allow <ip address>/<mask>`

Removes a host from the list of IP address from which access to the SOAP interface is permitted.

Parameters

<address>	IP address.
</mask>	Subnet mask in CIDR format. Specifies the number of bits in the mask.

soap-server http authentication

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

`soap-server http authentication`

Enable the SOAP server HTTP authentication.

`no soap-server http authentication`

Disable the SOAP server HTTP authentication.

soap-server http authentication password

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

`soap-server http authentication password`

Set the SOAP server HTTP authentication password.

soap-server http authentication username

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

`soap-server http authentication username`

Set the SOAP server HTTP authentication username.

soap-server port

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

`soap-server port <port number>`

Sets the port the AP will use to respond to SOAP requests.

Parameters

<port number> SOAP port number. Range 1 - 65535.

soap-server ssl

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

`soap-server ssl`

SSL enabled for SOAP server.

`no soap-server ssl`

SSL disabled for SOAP server.

soap-server ssl with client certificate

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

`soap-server ssl with client certificate`

Enable the use of client certificate with SSL for SOAP server.

`no soap-server ssl with client certificate`

Disable the use of client certificate with SSL for SOAP server.

soap-server access interface gre

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

`soap-server access interface gre <name>`

Enables access to SOAP via the specified GRE tunnel.

`no soap-server access interface gre <name>`

Removes access to SOAP via the specified GRE tunnel.

soap-server access wireless

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

`soap-server access wireless`

Enables SOAP access on the wireless port.

`no soap-server access wireless`

Blocks SOAP access on the wireless port.

soap-server access local mesh

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

`soap-server access local mesh <profile>`

Enables access to the management tool via the specified local mesh.

`no soap-server access local mesh <profile>`

Disables access to the management tool via the specified local mesh.

snmp-server trap low-snr

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

`snmp-server trap low-snr`

Send a trap when the average signal to noise ratio on a VAP (VSC) exceeds a specified level.

`no snmp-server trap low-snr`

Do not send this trap.

snmp-server trap low-snr interval

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

`snmp-server trap low-snr interval <number>`

Sets the interval at which the average SNR level is checked for each VAP (VSC).

snmp-server trap low-snr level

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

`snmp-server trap low-snr level <number>`

Sets the SNR level that will trigger a trap.

snmp-server trap new-association

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

`snmp-server trap new-association`

Send trap on when a new wireless client station associates with any VAP (VSC).

`no snmp-server trap new-association`

Do not send this trap.

snmp-server trap new-association interval

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

```
snmp-server trap new-association interval <number>
```

Interval, in minutes, between notifications.

snmp-server trap vpn-connection

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

```
snmp-server trap vpn-connection
```

Send a trap when a user establishes a VPN connection with the AP.

```
no snmp-server trap vpn-connection
```

Do not send this trap.

snmp-server trap wireless-association-fail

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

```
snmp-server trap wireless-association-fail
```

Send a trap when a wireless client station fails to associate with the AP.

```
no snmp-server trap wireless-association-fail
```

Do not send this trap.

snmp-server trap wireless-association-success

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

```
snmp-server trap wireless-association-success
```

Send a trap when a wireless client station successfully associates with the AP.

```
no snmp-server trap wireless-association-success
```

Do not send this trap.

snmp-server trap wireless-authentication-fail

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

```
snmp-server trap wireless-authentication-fail
```

Send a trap when a wireless client station fails to authenticate.

```
no snmp-server trap wireless-authentication-fail
```

Do not send this trap.

snmp-server trap wireless-authentication-success

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

```
snmp-server trap wireless-authentication-success
```

Send a trap when a wireless client station is successfully associated.

```
no snmp-server trap wireless-authentication-success
```

Do not send this trap.

snmp-server trap wireless-deauthentication-fail

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

```
snmp-server trap wireless-deauthentication-fail
```

Send a trap when a wireless client station fails to deauthenticate from the AP.

```
no snmp-server trap wireless-deauthentication-fail
```

Do not send this trap.

snmp-server trap wireless-deauthentication-success

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

```
snmp-server trap wireless-deauthentication-success
```

Send a trap when a wireless client station deauthenticates from the AP.

```
no snmp-server trap wireless-deauthentication-success
```

Do not send this trap.

snmp-server trap wireless-disassociation-fail

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

```
snmp-server trap wireless-disassociation-fail
```

Send a trap when a wireless client station fails to disassociate from the AP.

```
no snmp-server trap wireless-disassociation-fail
```

Do not send this trap.

snmp-server trap wireless-disassociation-success

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

```
snmp-server trap wireless-disassociation-success
```

Send a trap when a wireless client station disassociates from the AP.

```
no snmp-server trap wireless-disassociation-success
```

Do not send this trap.

snmp-server trap wireless-reassociation-fail

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

```
snmp-server trap wireless-reassociation-fail
```

Send a trap when a wireless client station fails to reassociate with the AP.

```
no snmp-server trap wireless-reassociation-fail
```

Do not send this trap.

snmp-server trap wireless-reassociation-success

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

```
snmp-server trap wireless-reassociation-success
```

Send a trap when a wireless client station reassociates with the AP.

```
no snmp-server trap wireless-reassociation-success
```

Do not send this trap.

snmp-server trap syslog-matches

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

```
snmp-server trap syslog-matches
```

Send a trap when syslog messages matches a specified regular expression.

```
no snmp-server trap syslog-matches
```

Do not send this trap.

snmp-server trap syslog-matches regex

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

```
snmp-server trap syslog-matches regex <regex>
```

Sets the regular expression used to match the syslog messages.

snmp-server trap syslog-severity level

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

```
snmp-server trap syslog-severity level (debug | info | notice | warning | error
| critical | alert | emergency)
```

Set the severity level of syslog messages that will trigger a trap.

snmp-server trap network-trace

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

```
snmp-server trap network-trace
```

Send a trap when a network trace is started or stopped.

```
no snmp-server trap network-trace
```

Do not send this trap.

firmware-update automatic

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

```
firmware-update automatic
```

Enables scheduled firmware upgrades.

```
no firmware-update automatic
```

Disables scheduled firmware upgrade.

The AP can automatically retrieve and install firmware from a local or remote URL at preset times. By placing AP firmware on a web or ftp server, you can automate the update process for multiple units.

When the update process is triggered the AP retrieves the first 2K of the firmware file to determine if it is different from the active version. If different, the entire firmware file is then downloaded and installed.

(Different means older or newer. This enables you to return to a previous firmware version if required).

Configuration settings are preserved during the update unless stated otherwise in the release notes for the firmware. However, all active connections will be terminated. Users will have to log in again after the AP restarts

firmware-update start

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

```
firmware-update start
```

Upload the firmware based on a specified URI. This URI can be set with the command: firmware-update uri.

firmware-update time

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

```
firmware-update time <time>
```

Sets the time of day the scheduled firmware upgrade will take place.

Parameters

<time>	Time as hh:mm:ss. For example: 15:44:00.

firmware-update uri

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

```
firmware-update uri <uri>
```

Sets the URI where the AP will retrieve new firmware.

```
no firmware-update uri
```

Clears the firmware URI.

firmware-update weekday

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

```
firmware-update weekday (everyday | monday | tuesday | wednesday | thursday |
friday | saturday | sunday)
```

Sets the day when the scheduled firmware upgrade will take place.

snmp-server trap firmware-update

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

```
snmp-server trap firmware-update
```

Send a trap on firmware update.

```
no snmp-server trap firmware-update
```

Do not send a trap on firmware update.

access-controller restrict location

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

`access-controller restrict location (gateway | mac <mac address>)`

Identifies the access controller the AP will communicate with.

Parameters

`gateway`	Use the default gateway as the service controller.
`mac`	Use the specified MAC address as the gateway.
`<mac address>`	MAC address. Specify 6 pairs of hexadecimal numbers separated by colons, with the values a to f in lowercase. For example: 00:00:00:0a:0f:01

service-sensor

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

`service-sensor`

Enables the service sensor. The service sensor polls a target device at present intervals. If the device does not respond, the radio is shut off.

`no service-sensor`

Disables the service sensor.

service-sensor

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

`service-sensor (gateway | address<ip address>)`

Sets the target device the service sensor will poll. This can be the default gateway or a specific IP address.

`no service-sensor`

Disables the service sensor.

Parameters

`gateway`	The service sensor will poll the default gateway.
`address`	The service sensor will poll another device.
`<ip address>`	IP address of the other device. For example: 192.168.10.10

service-sensor poll

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

`service-sensor poll <seconds>`

Sets the poll frequency.

Parameters

`<seconds>`	Poll frequency. Range: 1 - 3600 seconds.

service-sensor retry

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

`service-sensor retry <retries>`

Specify how many retries the service sensor will attempt when polling the target device.

When the retry limit is reached, the radio on the AP is turned off.

Parameters

<retires>	Number of retries. Range: 0 - 100.

service-sensor timeout

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

`service-sensor timeout <seconds>`

Sets how long the service sensor will wait for a response to a poll before timing out.

Parameters

<seconds>	Length of timeout. Range: 1 - 5 seconds.

ip name-server

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

`ip name-server <primary> [<secondary>] [<third>]`

Sets the primary and secondary DNS servers overriding dynamically assigned ones.

Parameters

<primary>	IP address of the primary DNS server.
<secondary>	IP address of the secondary DNS server.
<third>	IP address of the third DNS server.

ip name-server cache

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

`ip name-server cache`

Enables the DNS cache.

`no ip name-server cache`

Disables the DNS cache.

Once a host name has been successfully resolved to an IP address by a remote DNS server, it is stored in the cache. This speeds up network performance, as the remote DNS server now does not have to be queried for subsequent requests for this host.

The entry stays in the cache until:

- an error occurs when connecting to the remote host
- the time to live (TTL) of the DNS request expires
- the AP is restarted.

ip name-server dynamic

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

```
ip name-server dynamic
```

Enables dynamic assignment of DNS servers.

```
no ip name-server dynamic
```

Disables dynamic DNS assignment.

ip name-server interception

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

```
ip name-server interception
```

Intercepts all DNS requests from users and relays them to configured servers.

```
no ip name-server interception
```

Process DNS requests addressed to this device only.

ip name-server switch-on-servfail

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

```
ip name-server switch-on-servfail
```

Switch to next server when server failure is received.

```
no ip name-server switch-on-servfail
```

Do not switch to next server when server failure is received.

ip name-server switch-over

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

```
ip name-server switch-over
```

Switch over to primary when active.

```
no ip name-server switch-over
```

Do not switch over to primary when active.

snmp-server trap unauthorized-ap

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

```
snmp-server trap unauthorized-ap
```

Send a trap when a rogue access point is detected.

```
no snmp-server trap unauthorized-ap
```

Do not send this trap.

snmp-server trap unauthorized-ap interval

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

`snmp-server trap unauthorized-ap interval <number>`

If set to 0, then traps are only sent when a rogue access point is detected. If set to 0, the entire list of rogue access points is sent each time the interval expires.

wireless-scan

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

`wireless-scan`

Enables wireless neighborhood scanning.

`no wireless-scan`

Disables wireless neighborhood scanning.

wireless-scan period

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

`wireless-scan period <seconds>`

Specifies the interval between wireless neighborhood scans.

Parameters

<seconds>	Scanning interval. Range: 10 - 600 seconds.

wireless-scan url

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

`wireless-scan url <location>`

Sets the URL of the file that contains a list of all authorized access points.

`no wireless-scan url`

Deletes the URL of the file that contains a list of all authorized access points.

The format of this file is XML. Each entry in the file is composed of two items: MAC address and SSID. Each entry should appear on a new line.

For example:

00:00:00:07:f5:11 "AP_1"

00:00:00:07:f5:23 "AP_2"

00:00:00:07:f5:12 "AP_3"

access controller shared secret

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

`access controller shared secret <secret>`

Sets the shared secret used to communicate with the service controller.

`no access controller shared secret`

Sets the shared secret used to communicate with the access controller.

The service controller will only accept authentication/location-aware information from satellites that have a matching shared secret to its own.

radius-server profile

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

`radius-server profile <name>`

Creates a new RADIUS profile or switches to the RADIUS context with the specified profile name.

`no radius-server profile <name>`

Deletes the specified RADIUS profile.

ip-qos profile

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

`ip-qos profile <name>`

Creates a new IP QoS profile or switches to the IP QoS context with the specified profile name.

`no ip-qos profile <name>`

Deletes the specified IP QoS profile.

dot11 igmp snooping-helper

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

`dot11 igmp snooping-helper`

Enables IGMP snooping helpers which ensure that the AP correctly delivers multicast packets to roaming client stations that are part of a multicast group.

`no dot11 igmp snooping-helper`

Disable IGMP snooping helpers.

discovery protocol

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

`discovery protocol`

Enables broadcast of device information for interoperability with CDP-enabled networking hardware.

`no discovery protocol`

Disable broadcast of device information.

discovery protocol device-id

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

`discovery protocol device-id <name>`

Overwrite the device-id field of information packets (the AP serial number is not used).

`no discovery protocol device-id`

Do not overwrite the device-id field of information packets (use the AP serial number).

bridge priority

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

`bridge priority <number>`

Sets the bridge priority for the spanning tree.

The spanning tree uses the bridge ID to elect the root bridge and the designated bridges. The bridge ID is built with the MAC address of the bridge and the bridge priority. The first 2 most significant bytes are the bridge priority and the next 6 bytes are the MAC address. To control which bridge will become the root bridge, you can configure the bridge priority parameter on the bridges. The root will be the bridge with the lowest bridge ID. The Bridge priority has a valid range of 0 to 0xFFFF. The default value is the middle value: 0x8000.

bridge protocol ieee

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

`bridge protocol ieee`

Enable the bridge spanning tree protocol to prevent undesirable loops from occurring in the network that may result in decreased throughput.

`no bridge protocol ieee`

Disable the bridge spanning tree protocol.

bridge protocol ieee vlan

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

`bridge protocol ieee vlan`

Enable the bridge spanning tree protocol for VLANs.

`no bridge protocol ieee vlan`

Disable the bridge spanning tree protocol for VLANs.

ip route gateway

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

`ip route gateway<destination>/<mask> <gateway> <[metric]>`

Adds a static route.

`no ip route gateway <destination>/<mask> <gateway> <[metric]>`

Removes the specified static route.

Parameters

<destination>	Traffic addressed to this IP address will be routed.
<mask>	Indicates the number of bits in the destination address that is checked for a match.
<gateway>	Indicates the IP address of the gateway the AP will forward routed traffic to. The gateway address must be on the same subnet as one of the available interfaces (Internet port or LAN port).
<metrix>	Indicates the priority of a route. If two routes exist for a destination address then the AP chooses the one with the lower metric.

dot1x reauth

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

```
dot1x reauth
```

Enable this option to force 802.1X client stations to reauthenticate.

```
no dot1x reauth
```

Disables 802.1X reauthentication.

dot1x reauth period

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

```
dot1x reauth period (15m | 30m | 1h | 2h | 4h | 8h | 12h)
```

Sets the 802.1X reauthentication interval. Client stations must reauthenticate when this interval expires.

dot1x reauth terminate

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

```
dot1x reauth terminate
```

Enable this option to allow client stations to remain connected during re-authentication. Client traffic is blocked only when re-authentication fails.

```
no dot1x reauth terminate
```

Disabled this option to block client traffic during re-authentication and only activate traffic again if authentication succeeds.

dot1x supplicant timeout

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

```
802.1x supplicant time-out <seconds>
```

Sets the 802.1X supplicant time-out.

Parameters

<seconds>	time-out in seconds.

dynamic key

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

```
dynamic key
```

Enables dynamic key support for 802.1X and WPA.

```
no dynamic key
```

Disables dynamic key support for 802.1X and WPA.

dynamic key interval

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

```
dynamic key interval (5m | 10m | 15m | 30m | 1h | 2h | 4h | 8h | 12h)
```

Specifies how often (in minutes or hours) that the group (broadcast) key is changed for 802.1X and WPA.

add wireless ip-qos profile

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

```
add wireless ip-qos profile <name>
```

Adds the specified profile to the list of IP QoS profiles in effect for the wireless links.

<profile-name> Name of an existing IP QoS profile.

delete wireless ip-qos profile all

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

```
delete wireless ip-qos profile all
```

Clears the list of IP QoS profiles currently in effect for the wireless links.

delete wireless ip-qos profile

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

```
delete wireless ip-qos profile <name>
```

Removes the specified profile from the list of IP QoS profiles in effect for the wireless links.

<profile-name> Name of an existing IP QoS profile currently in the profile list for the wireless links.

wireless link qos

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

```
wireless link qos (disabled | 802.1p | wme | very-high | high | normal | low |
tos | diffsrv)
```

Sets the wireless link QoS policy.

sensor discovery mode

Supported on: MSM320 MSM335

```
sensor discovery mode (id | ip)
```

Sets the method the AP will use to communicate with the RF Manager Server.

Parameters

`id` Connect using the Server ID of the RF Manager Server.

`ip` Connect using the IP address or hostname of the RF Manager Server.

Description

For these methods to work, the following must be true:

- The AP must be able to reach the RF Manager Server via a network connected to port 1 or port 2. For example, you should be able to ping the RF Manager Server IP address from the AP.
- If there are any firewalls between the AP and the RF Manager Server, then TCP and UDP ports 3851 must be open bidirectionally.
- If using the hostname option, an entry must be created on the network DNS server that points to the IP address of the RF Manager Server.
- If using the Server ID option, support for multicast traffic must be enabled on all routers and switches connected between the AP and the RF Manager Server.

sensor network detector

Supported on: MSM320 MSM335

`sensor network detector`

Enable the Network Detector.

`no sensor network detector`

Disable the Network Detector.

sensor server id

Supported on: MSM320 MSM335

`sensor server id <id>`

Sets the server ID of the the RF Manager Server to connect to.

Parameters

`ID`	Specify the Server ID of the RF Manager Server to connect to. Set the Server ID to 0 to have the AP send a discovery request to all active RF Manager Servers. The AP will connect to the first server that responds to the discovery request.

sensor server name

Supported on: MSM320 MSM335

`sensor server name <name>`

Sets the IP address or hostname of the the RF Manager Server to connect to.

Parameters

`Name`	Specify the IP address of the the RF Manager Server or its hostname. If a hostname is specified, the AP must be able to resolve it via DNS, that is, an entry must be created on the network DNS server that points to the IP address of the RF Manager Server.

config-version

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

`config-version <string>`

Sets a string to identify the user configuration version.

Port-2 interface context

Path: View > Enable > Config > Port-2 interface

This context provides commands for configuring Port-2.

end

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

```
end
```

Switches to parent context.

duplex

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

```
duplex (auto | half | full)
```

Sets the duplex mode on Port-2.

Parameters

`auto`	Lets the AP automatically set duplex mode based on the type of equipment it is connected to.
`half`	Forces the port to operate in half duplex mode.
`full`	Forces the port to operate in full duplex mode.

speed

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

```
speed (auto | 10 | 100)
```

Sets the speed of Port-2.

Parameters

`auto`	Lets the AP automatically set port speed based on the type of equipment it is connected to.
`100`	Forces the port to operate at 100 mbps.
`10`	Forces the port to operate at 10 mbps.

vlan

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

```
vlan <id>
```

Sets the default VLAN ID. Range: 1 - 4094. All outgoing traffic that does not have a VLAN already assigned to it, is sent on this VLAN.

```
no vlan
```

Deletes the default VLAN ID.

vlan compatibility mode

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

`vlan compatibility mode`

When this option is enabled, the AP sends all management traffic AND all untagged traffic on both the default VLAN and untagged.

`no vlan compatibility mode`

Disable VLAN and untagged compatibility mode.

vlan-management filter

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

`vlan-management filter`

Restricts the default VLAN to carry management traffic only.

`no vlan-management filter`

Does not restrict the default VLAN to carry management traffic only.

Management traffic includes:

- all traffic that is exchanged by the AP and the access controller
- all communications with RADIUS servers
- HTTPS sessions to the management tool
- SNMP traffic

interface vlan

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

`interface vlan <id>[-<id2>]`

Switches to the specified VLAN interface or create a new VLAN interface with the specified ID.

`no interface vlan <id>[-<id2>]`

Deletes the specified VLAN.

Parameters

<id>	VLAN ID. Range: 1 - 4094.
<id2>	VLAN ID. When specified, this is the last value in a range.

Port-1 interface context

Path: View > Enable > Config > Port-1 interface

This context provides commands for configuring Port-1.

end

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

```
end
```

Switches to parent context.

duplex

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

```
duplex (auto | half | full)
```

Sets the duplex mode on Port-1.

Parameters

`auto`	Lets the AP automatically set duplex mode based on the type of equipment it is connected to.
`half`	Forces the port to operate in half duplex mode.
`full`	Forces the port to operate in full duplex mode.

speed

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

```
speed (auto | 10 | 100)
```

Sets the speed of Port-1.

Parameters

`auto`	Lets the AP automatically set port speed based on the type of equipment it is connected to.
`100`	Forces the port to operate at 100 mbps.
`10`	Forces the port to operate at 10 mbps.

vlan

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

```
vlan <id>
```

Sets the default VLAN ID. Range: 1 - 4094. All outgoing traffic that does not have a VLAN already assigned to it, is sent on this VLAN.

```
no vlan
```

Deletes the default VLAN ID.

vlan compatibility mode

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

`vlan compatibility mode`

When this option is enabled, the AP sends all management traffic AND all untagged traffic on both the default VLAN and untagged.

`no vlan compatibility mode`

Disable VLAN and untagged compatibility mode.

vlan-management filter

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

`vlan-management filter`

Restricts the default VLAN to carry management traffic only.

`no vlan-management filter`

Does not restrict the default VLAN to carry management traffic only.

Management traffic includes:

- all traffic that is exchanged by the AP and the access controller
- all communications with RADIUS servers
- HTTPS sessions to the management tool
- SNMP traffic

interface vlan

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

`interface vlan <id>[-<id2>]`

Switches to the specified VLAN interface or create a new VLAN interface with the specified ID.

`no interface vlan <id>[-<id2>]`

Deletes the specified VLAN interface.

Parameters

<id>	VLAN ID. Range: 1 - 4094.
<id2>	VLAN ID. When specified, is the last value in a range.

WAN IP interface context

Path: View > Enable > Config > WAN IP interface

This context provides commands for configuring various IP-networking related settings.

pppoe client user

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

`pppoe client user <username> <password>`

Sets the PPPoE username and password.

`no pppoe client user`

Deletes the PPPoE username.

Parameters

<username>	The username assigned to you by your ISP. The AP will use this username to log on to your ISP when establishing a PPPoE connection.
<password>	The password assigned to you by your ISP. The AP will use this username to log on to your ISP when establishing a PPPoE connection.

ip address mode

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

`ip address mode (dhcp | pppoe | static)`

Sets the IP addressing mode for Port-2.

Parameters

`dhcp`	Dynamic host configuration protocol. The DHCP server will automatically assign an address to the AP, which functions as a DHCP client.
`pppoe`	Point-to-point protocol over Ethernet. The PPPoE server will automatically assign an IP address to the AP. You need to supply a username and password so the AP can log on.
`static`	This option enables you to manually assign an IP address to the AP.

ip address

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

`ip address <ip address>/<mask>`

Sets a static IP address for the port.

Parameters

<address>	IP address.
</mask>	Subnet mask in CIDR format. Specifies the number of bits in the mask.

ip default-gateway

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

`ip default-gateway <ip address>`

Sets the IP address of the default gateway.

`no ip default-gateway`

Deletes the default gateway IP address.

Parameters

<address>	IP address.

ip address dhcp client-id

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

`ip address dhcp client-id <id>`

Specifies an ID to identify the AP to a DHCP server. This parameter is not required by all ISPs.

`no ip address dhcp client-id`

Deletes the specified DHCP client id.

end

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

`end`

Switches to parent context.

pppoe auto-reconnect

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

`pppoe auto-reconnect`

The AP will automatically attempt to reconnect if the connection is lost.

`no pppoe auto-reconnect`

The AP will not automatically attempt to reconnect if the connection is lost.

pppoe mru

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

`pppoe mru <bytes>`

Specifies the maximum receive unit.

Changes to this parameter should only be made according to the recommendations of your ISP. Incorrectly setting this parameter can reduce the throughput of your Internet connection.

Parameters

<bytes>	Maximum size (in bytes) of a PPPoE packet when receiving. Range: 500 - 1500 bytes.

pppoe mtu

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

`pppoe mtu <bytes>`

Specifies the maximum transmit unit.

Changes to this parameter should only be made according to the recommendations of your ISP. Incorrectly setting this parameter can reduce the throughput of your Internet connection.

Parameters

<bytes>	Maximum size (in bytes) of a PPPoE packet when transmitting. Range: 500 - 1500 bytes.

pppoe unnumbered

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

```
pppoe unnumbered
```

Enable unnumbered mode.

```
no pppoe unnumbered
```

Disable unnumbered mode.

This feature is useful when the AP is connected to the Internet and NAT is not being used. Instead of assigning two IP addresses to the AP, one to the Internet port and one to the LAN port, both ports can share a single IP address. This is especially useful when a limited number of IP addresses are available to you.

Wireless context

Path: View > Enable > Config > Wireless

This context provides commands for configuring the wireless network.

end

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

```
end
```

Switches to parent context.

radio active

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

```
radio active
```

Enables the radio.

```
no radio active
```

Disables the radio.

rts threshold

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

```
rts threshold <value>
```

Sets the RTS threshold.

```
no rts threshold
```

Deletes the RTS threshold value.

Parameters

< value>	Threshold value in the range 128 and 1540.

Description

Use this parameter to control collisions on the link that can reduce throughput. If the Status Wireless page on the management tool shows increasing values for Tx multiple retry frames or Tx single retry frames, you should adjust this value until the errors clear up. Start with a value of 1024 and then decrease to 512 until errors are reduced or eliminated.

Using a small value for RTS threshold can affect throughput.

If a packet is larger than the threshold, the AP will hold it and issue a request to send (RTS) message to the client station. Only when the client station replies with a clear to send (CTS) message will the AP send the packet. Packets smaller than the threshold are transmitted without this handshake.

distance

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

```
distance (small | medium | large)
```

Sets the distance between access points.

Use this parameter to adjust the receiver sensitivity of the AP. This parameter should only be changed if:

- you have more than one wireless access point installed in your location
- you are experiencing throughput problems

In all other cases, use the default setting of Large.

If you have installed multiple APs, reducing the receiver sensitivity of the AP from its maximum will help to reduce the amount of crosstalk between the wireless stations to better support roaming clients. By reducing the receiver sensitivity, client stations will be more likely to connect with the nearest access point.

dot11

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

`dot11 <mode> <frequency>`

Sets the wireless mode and the frequency the AP will operate at.

Parameters

<mode> Sets the transmission speed and frequency band. The available options are determined by the wireless card installed in the AP, and may include:

- a: Selects 802.11a providing 54 Mbps in the 5 GHz frequency band.
- b: Selects 802.11b providing 11 Mbps in the 2.4 GHz frequency band.
- g: Selects 802.11g providing 54 Mbps in the 2.4 GHz frequency band.
- bg: Selects 802.11b + 802.11g providing 11 and 54 Mbps in the 2.4 GHz frequency band.
- n: Selects 802.11n.
- an: Selects 802.11n + 802.11a, on the 5Ghz frequency band.
- gn: Selects 802.11n + 802.11g, on the 2.4Ghz frequency band.
- bgn: Selects 802.11n + 802.11g + 802.11b, on the 2.4Ghz frequency band.

<frequency> Sets the operating frequency by specifying a number in GHz or by specifying a channel number. The frequencies that are available are determined by the radio installed in the AP and the regulations that apply in your country.

For optimum performance when operating in 802.11b or 802.11g modes, choose a frequency that differs from other wireless access points operating in neighboring cells by at least 25 MHz.

If operating in 802.11a mode, all channels are non-overlapping.

transmit power

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

`transmit power (DB | max)`

Sets the maximum transmission power of the wireless radio.

Parameters

<db> Power is specified in steps of 1dBm. The maximum setting is 18 dBm.

Note: The actual transmit power used may less than the value specified. The AP determines the power to used based on the settings you made for regulatory domain, wireless mode, and operating frequency.

antenna bidirectionnal

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

```
antenna bidirectionnal (diversity | main | auxiliary)
```

Sets the antenna to transmit and receive on. Select diversity to transmit and receive on both antennas.

Parameters

`diversity`	In this mode both antennas are used to transmit and receive. The AP supports both transmit and receive diversity.
`main`	Transmit and receive on the main antenna only.
`aux`	Transmit and receive on the aux antenna only.

antenna gain

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

```
antenna gain <number>
```

Used only for Radar detection, records gain (in 5GHz band) of external antenna installed on device. Does not affect output power.

autochannel skip

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

```
autochannel skip <chan>
```

Adds the specified channel to the list of channels that are not allowed to be selected by the Auto Channel algorithm.

```
no autochannel skip <chan>
```

Removes the specified channel to the list of channels that are not allowed to be selected by the Auto Channel algorithm.

beacon interval

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

```
beacon interval <value>
```

Sets the beacon interval.

Parameters

< value>	Beacon interval value in the range 20 and 500 time units (TU) (1 TU = 1024us).

dot11 automatic frequency

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

```
dot11 automatic frequency
```

Enable this option to have the AP automatically determine the best operating frequency.

```
no dot11 automatic frequency
```

Disable automatic frequency selection.

dot11 automatic frequency period

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

```
dot11 automatic frequency period (disabled | 1h | 2h | 4h | 8h | 12h | 24h)
```

Specify how often the frequency setting is re-evaluated when automatic frequency selection is enabled.

dot11 automatic frequency time

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

```
dot11 automatic frequency time <time>
```

Specify when the channel should be re-evaluated.

dot11 automatic transmit-power

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

```
dot11 automatic transmit-power
```

Enables automatic transmit power selection.

```
no dot11 automatic transmit-power
```

Disables automatic transmit power selection.

dot11 automatic transmit-power period

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

```
dot11 automatic transmit-power period (1h | 2h | 4h | 8h | 12h | 24h)
```

Sets the interval at which the transmit power setting is re-evaluated when automatic power selection is enabled.

multicast rate

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

```
multicast rate (1 | 2 | 5.5 | 6 | 9 | 11 | 12 | 18 | 24 | 36 | 48 | 54)
```

Sets the transmit rate for multicast traffic.

This is a fixed rate, which means that if a station is too far away to receive traffic at this rate, then the multicast will not be seen by the station. By rasing the multicast rate you can increase overall throughput significantly.

station distance

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

```
station distance (0km | 5km | 10km | 15km | 20km | 25km | 30km | 35km)
```

Fine tunes internal timeout settings to account for the distance that wireless links span. For normal operation, the AP is optimized for links of less than 1 km.

This is a global setting that is useful when creating wireless links to remote sites. However, it also applies to all wireless connection made with the radio, not just for wireless links. Therefore, if you are also using the radio to serve local wireless client stations, adjusting this setting may lower the performance for clients with marginal signal strength or when interference is present.
(Essentially, it means that if a frame needs to be retransmitted it will take longer before the actual retransmit takes place.)

dot11 mode

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

```
dot11 mode (monitor | ap+wds | ap-only | wds-only | sensor)
```

Sets the operating mode for the radio.

spectralink view

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

```
spectralink view
```

Enable the use of spectralink view.

```
no spectralink view
```

Disable the use of spectralink view.

dot11n channel extension

Supported on: MSM410 MSM422

```
dot11n channel extension (above | below)
```

Select the 802.11n channel extension. Applicable only in the 2.4 GHz band with a 40 MHz channel width.

dot11n channel width

Supported on: MSM410 MSM422

```
dot11n channel width (40 | 20 | auto)
```

Select the 802.11n channel width.

dot11n guard interval

Supported on: MSM410 MSM422

```
dot11n guard interval (short | long)
```

Select the 802.11n guard interval.

dot11n multicast rate

Supported on: MSM410 MSM422

```
dot11n multicast rate <rate>
```

Set the multicast rate for use with 802.11n networks.

bandwidth

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

```
bandwidth
```

Enables bandwidth control.

```
no bandwidth
```

Disables bandwidth control.

bandwidth max

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

```
bandwidth max <rate>
```

Set the maximum data rate on the wireless port in kbps.

Parameters

<rate>	Maximum data rate. Range: 50 - 500000 kbps.

Virtual AP context

Path: View > Enable > Config > Virtual AP

This context provides commands for configuring Virtual AP profiles (VAP (VSC)s).

By default one profile exists with the name "". This is the default profile and cannot be deleted.

The following example shows how to add a new VAP (VSC) with egress mapped to an existing VLAN named "hongkong":

CLI(config)# virtual ap newap

CLI(virtual-ap)# access control

CLI(virtual-ap)# egress any vlan hongkong

CLI(virtual-ap)# ssid name "newap"

CLI(virtual-ap)# ingress ssid

CLI(virtual-ap)# bandwidth high

CLI(virtual-ap)# end

CLI(config)#

virtual ap name

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

`virtual ap name <name>`

Change the VAP (VSC) name.

ingress interface

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

`ingress interface (wireless | wireless) <name>`

Sets the specified interface as the ingress interface traffic will be accepted on.

`no ingress interface (wireless | wireless) <name>`

Removes the specified interface as an ingress interface.

guest-mode

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

`guest-mode`

Enables broadcast of the wireless network name (SSID).

`no guest-mode`

Disables broadcast of the wireless network name (SSID).

max-association

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

`max-association <stations>`

Sets the maximum number of clients stations that can associate with this VAP (VSC).

<stations> Number of client stations. Range: 1 - 255.

ssid name

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

`ssid name <name>`

Specifies the WLAN name (SSID) for the profile.

vlan

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

`vlan <id>`

Assigns a VLAN ID to this VAP (VSC).

`no vlan`

Deletes the VLAN ID for this VAP (VSC).

Parameters

<id>	VLAN ID. Range: 1 - 4094.

encryption key 1

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

`encryption key <key> <value>`

Sets WEP key 1.

`no encryption key <key>`

Deletes WEP key 1.

Parameters

<key>	WEP key number. Range: 1 - 4. Keys 2 to 4 are only supported on the first WLAN profile.
<value>	Key value. The number of characters you specify for a key determines the level of encryption the AP will provide. For 40-bit encryption, specify 5 ASCII characters or 10 HEX digits. For 128-bit encryption, specify 13 ASCII characters or 26 HEX digits.

encryption key format

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

`encryption key format (hex | ascii)`

Specify the WEP key format.

Parameters

`hex`	Hex keys should only include the following digits: 0-9, a-f, A-F
`ascii`	ASCII keys are much weaker than carefully chosen hex keys. You can include ASCII characters between 32 and 126, inclusive, in the key. However, note that not all client stations support non-alphanumeric characters such as spaces, punctuation, or special symbols in the key.

transmit key

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

`transmit key <key number>`

Sets the key the AP will use to encrypt transmitted data. All four keys are used to decrypt received data.

Parameters

<key number> Transmit key number. Range: 1 -4.

authentication server access controller

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

`authentication server access controller`

Use the access controller to authenticate 802.1X or WPA logins.

authentication server accounting

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

`authentication server accounting`

Enables RADIUS accounting for this VAP (VSC).

`no authentication server accounting`

Disables RADIUS accounting for this VAP (VSC).

authentication server accounting radius profile

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

`authentication server accounting radius profile <name>`

Sets RADIUS accounting to use the specified RADIUS profile.

`no authentication server accounting radius profile`

Removes accounting support for 802.1x.

authentication server radius

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

`authentication server radius <name>`

Sets the RADIUS profile to use for 802.1X or WPA authentication.

dot1x authentication

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

`dot1x authentication (local | radius | active-directory)`

Sets the authentication for 802.1X and WPA.

wpa-psk

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

`wpa-psk <key>`

Sets the WPA preshared key.

`no wpa-psk`

Deletes the WPA preshared key.

Parameters

<key>	Specify a key that is between 8 and 63 alphanumeric characters in length. It is recommended that the preshared key be at least 20 characters long, and be a mix of letters and numbers. The double quote character should not be used

Description

The AP uses the key you specify to generate the TKIP keys that encrypt the wireless data stream. Since this is a static key, it is not as secure as the RADIUS option.

authentication server accounting radius stationid case

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

`authentication server accounting radius stationid case (uppercase | lowercase)`

Specifies the case applied to the station delimiter if it is a letter.

authentication server accounting radius stationid delimiter

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

`authentication server accounting radius stationid delimiter (null | colon | dash | dot | space | comma | under)`

Specifies the one-character delimiter that will be used to format both the calling station ID and the called station ID attributes in RADIUS packets.

wireless filters

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

`wireless filters`

Enables the wireless security filters which only allow traffic to flow between the AP and a specific upstream device (such as a service controller).

`no wireless filters`

Do not limit traffic flow between the AP and an upstream device.

This prevents wireless users from accessing resources on the backbone LAN that interconnects the AP and the upstream device.

wireless filters mac

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

`wireless filters mac <mac>`

Sets the MAC address of the upstream device to send traffic to.

```
no wireless filters mac <mac>
```

Deletes the MAC address of the upstream device to send traffic to.

wireless filters rule input

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

```
wireless filters rule input <rule>
```

Adds a custom filter definition for incoming wireless traffic.

Use this command to define custom security filters for incoming wireless traffic. Filters are specified using standard pcap syntax (http://www.tcpdump.org/tcpdump_man.html) with the addition of a few -specific placeholders. These placeholders can be used to refer to specific MAC addresses and are expanded by the AP when the filter is activated. Once expanded, the filter must respect the pcap syntax. The pcap syntax is documented in the tcpdump man page:

Placeholders

- %a - MAC address of the access controller.
- %b - MAC address of the bridge.
- %g - Mac address of the default gateway assigned to the AP.
- %w - MAC address of wireless port.

wireless filters rule output

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

```
wireless filters rule output <rule>
```

Adds a custom filter definition for outgoing wireless traffic.

Use this command to define custom security filters for outgoing wireless traffic. Filters are specified using standard pcap syntax (http://www.tcpdump.org/tcpdump_man.html) with the addition of a few -specific placeholders. These placeholders can be used to refer to specific MAC addresses and are expanded by the AP when the filter is activated. Once expanded, the filter must respect the pcap syntax. The pcap syntax is documented in the tcpdump man page:

Placeholders

- %a - MAC address of the access controller.
- %b - MAC address of the bridge.
- %g - Mac address of the default gateway assigned to the AP.
- %w - MAC address of wireless port.

wireless filters type

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

```
wireless filters type (mac | gateway | rules)
```

Sets the type of wireless security filter to use.

Parameters

`mac`	Traffic is forwarded to an upstream device with a specific MAC address. Wireless security filters use the default definitions.
`gateway`	Traffic is forwarded to the default gateway assigned to the AP. Wireless security filters use the default definitions.

`custom` Lets you define custom security filters and address for the upstream device.

Description

The AP features an intelligent bridge which can apply security filters to safeguard the flow of wireless traffic. The filters limit both incoming and outgoing traffic as defined below, and force the AP to exchange traffic with a specific upstream device. If the AP is configured to use the services of a access controller, then the default security filters are automatically enabled and all traffic is sent to the access controller.

Default filters for incoming wireless traffic

Applies to traffic sent from wireless client stations to the AP.

Accepted

- Any IP traffic addressed to the access controller.
- PPPoE traffic (The PPPoe server must be the upstream device.)
- IP broadcast packets, except NetBIOS
- Certain address management protocols (ARP, DHCP) regardless of their source address.
- Any traffic addressed to the AP, including 802.1x.

Blocked

- All other traffic is blocked. This includes NetBIOS traffic regardless of its source/destination address. TTPS traffic not addressed to the AP (or upstream device) is also blocked, which means wireless client stations cannot access the management tool on other products.

Default filters for outgoing wireless traffic

Applies to traffic sent from the AP to wireless client stations.

Accepted

- Any IP traffic coming from the upstream device, except NetBIOS packets.
- PPPoE traffic from the upstream device.
- IP broadcast packets, except NetBIOS
- ARP and DHCP Offer and ACK packets.
- Any traffic coming from the AP itself, including 802.1x.

Blocked

- All other traffic is blocked. This includes NetBIOS traffic regardless of its source/destination address.

mac-filters local

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

```
mac-filters local
```

Enables the MAC filter list.

```
no mac-filters local
```

Disables the MAC filter list.

mac-filters

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

`mac-filters <address>`

Adds an address to the MAC filter list.

`no mac-filters <address>`

Remove the specified address from the MAC filter list.

Parameters

<address>	MAC address. Specify 6 pairs of hexadecimal numbers separated by colons, with the values a to f in lowercase. For example: 00:00:00:0a:0f:01

Description

This feature enables you to control access to the AP based on the MAC address of client stations. You can either block access or allow access, depending on your requirements. When both this option and the MAC-based authentication options are enabled, the following applies: if a user MAC address does not appear in the MAC filtering list, then MAC-based authentication takes place for that user.

mac-filters mode

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

`mac-filters mode (allow | block)`

Either allow or block access to the wireless network for client stations whose addresses appear in the MAC filter list.

mac authentication accounting

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

`mac authentication accounting`

Enables RADIUS accounting for this VAP (VSC).

`no mac authentication accounting`

Disables RADIUS accounting for this VAP (VSC).

mac authentication accounting radius profile

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

`mac authentication accounting radius profile <name>`

Sets RADIUS accounting to use the specified RADIUS profile.

`no mac authentication accounting radius profile`

Disables accounting support for MAC authentication.

mandatory authentication

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

`mandatory authentication`

MAC-based authentication is mandatory.

```
no mandatory authentication
```

MAC-based authentication is not mandatory.

mac authentication radius profile

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

```
mac authentication radius profile <radiusname>
```

Specifies the name of the RADIUS profile to use for MAC-based authentication.

```
no mac authentication radius profile
```

Do not use a RADIUS profile.

mac authentication radius stationid case

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

```
mac authentication radius stationid case (uppercase | lowercase)
```

Specifies the case applied to the station delimiter if it is a letter.

mac authentication radius stationid delimiter

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

```
mac authentication radius stationid delimiter (null | colon | dash | dot | space
| comma | under)
```

Specifies the one-character delimiter that will be used to format both the calling station ID and the called station ID attributes in RADIUS packets.

mac authentication

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

```
mac authentication
```

Enables support for MAC-based authentication.

```
no mac authentication
```

Disable support for MAC-based authentication.

add ip filter

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

```
add ip filter <ip address>/<mask>
```

Adds an IP filter to the list of destination addresses that traffic will be accepted for. All other traffic will be blocked.

If the list is empty, then all wireless-to-wired LAN traffic is permitted.

Where:

<address>	IP address.
</mask>	Subnet mask in CIDR format. Specifies the number of bits in the mask.

delete ip filter

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

`delete ip filter <ip address>/<mask>`

Deletes the specified address from the IP filter list.

If the list is empty, then all wireless-to-wired LAN traffic is permitted.

Where:

<address>	IP address.
</mask>	Subnet mask in CIDR format. Specifies the number of bits in the mask.

delete ip filter all

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

`delete ip filter all`

Deletes all addresses from the IP filter list.

ip filters

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

`ip filters`

Activates the IP filter which enables you to block wireless-to-wired LAN traffic on this profile based on its destination address.

`no ip filters`

Disables the IP filter for this profile.

active

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

`active`

Enable this VAP (VSC).

`no active`

Disable this VAP (VSC).

beacon dtim count

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

`beacon dtim count <number>`

Defines the DTIM period in the beacon.

Client stations use the DTIM to wake up from low-power mode to receive multicast traffic. The AP transmits a beacon every 100 ms. The DTIM counts down with each beacon that is sent, therefore if the DTIM is set to 5, then client stations in low-power mode will wake up every 500 ms (.5 second) to receive multicast traffic.

beacon transmit power

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

`beacon transmit power`

Advertise the current transmit power setting in the beacon.

`no beacon transmit power`

Do not advertise the current transmit power setting in the beacon.

data rate

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

`data rate (a | b | g | bg | n) <rate>`

Enable the given data rate for a particular PHY type.

`no data rate (a | b | g | bg | n) <rate>`

Disable the given data rate for a particular PHY type.

public forwarding

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

`public forwarding (any | 802.1x | none | ipv6)`

Enables support for traffic exchange between wireless client stations.

fast authentication

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

`fast authentication`

Enables WPA2 opportunistic key caching.

`no fast authentication`

Disables WPA2 opportunistic key caching.

layer3 mobility

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

`layer3 mobility`

Enables Layer 3 mobility.

`no layer3 mobility`

Disables Layer 3 mobility.

add ip-qos profile

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

`add ip-qos profile <name>`

Adds the specified profile to the list of IP QoS profiles in effect for this VAP (VSC).

<profile-name> Name of an existing IP QoS profile.

delete ip-qos profile all

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

```
delete ip-qos profile all
```

Clears the list of IP QoS profiles currently in effect for this VAP (VSC).

delete ip-qos profile

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

```
delete ip-qos profile <name>
```

Removes the specified profile from the list of IP QoS profiles in effect for this VAP (VSC).

<profile-name> Name of an existing IP QoS profile currently in the profile list for this VAP (VSC).

qos

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

```
qos ( 802.1p | very-high | high | normal | low | diffsrv | tos | default | vap0
| vap1 | vap2 | vap3)
```

Sets the QoS level for this profile.

```
no qos
```

Disables QoS for this profile.

Four traffic queues are provided based on the WME standard. In order of priority, these queues are:

- 1: Voice traffic
- 2: Video traffic
- 3: Best effort data traffic
- 4: Background data traffic

Each QoS priority mechanism maps traffic to one of the four traffic queues. Client stations that do not support the QoS mechanism for the profile they are connected to are always assigned to queue 3.

Important: Traffic delivery is based on strict priority (per the WME standard). Therefore, if excessive traffic is present on queues 1 or 2, it will reduce the flow of traffic on queues 3 and 4.

`802.1p` Traffic from 802.1p client stations is classified based on the VLAN priority field present within the VLAN header. When this mechanism is selected, the AP will advertise WME capabilities, enabling WME clients to associate and take advantage of them. This setting has no effect on legacy clients.

Note: To support 802.1p, the wireless profile must have a VLAN assigned to it, which means that client station traffic is forwarded onto the LAN port only.

`vap0 to vap3`	Allows a specific priority level to be specified for all traffic on a VAP (VSC) profile. This enables client stations without a QoS mechanism to set traffic priority by connecting to the appropriate SSID. If you enable this priority mechanism, it takes precedence regardless of the priority mechanism supported by associated client stations. For example, if you set SSID-based low priority for a profile, all devices that connect to the profile have their traffic set at this priority Mapping to the traffic queues is as follows: vap0 or very-high=queue 1, vap1 or high=queue 2, vap2 or normal=queue 3, vap3 or low=queue 4
`diffsrv`	Differential services is a method for defining IP traffic priority on a per-hop basis. The Differential Service bits are defined in RFC2474 and are composed of the six most significant bits of the IP TOS field. These bits define the class selector code points which the CN320 maps to the appropriate traffic queue. (default setting)
`tos`	The IP TOS (type of service) field can be used to mark prioritization or special handling for IP packets.

upstream diffserv tagging

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

```
upstream diffserv tagging
```

Enables upstream diffserv tagging.

```
no upstream diffserv tagging
```

Disables upstream diffserv tagging.

wmm advertising

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

```
wmm advertising
```

Enables WMM information element advertising.

```
no wmm advertising
```

Disables WMM information element advertising.

location-aware group

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

```
location-aware group <name>
```

Sets the specified group name for the access point.

```
no location-aware group
```

Deletes the specified group name for the access point.

end

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

```
end
```

Switches to parent context.

security

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

```
security (none | wep | 802.1x [wep | static-wep] | wpa (psk | radius) [ v1 | v2
] )
```

Sets the current wireless security policy.

Parameters

`none`	No wireless security.
`wep`	This option enables support for wireless users with WEP client software.
`802.1x`	This option enables support for wireless users with 802.1X client software. The AP supports 802.1x client software that uses EAP-TLS, EAP-TTLS, EAP-SIM, and PEAP.
`wep`	Enables the use of dynamic WEP keys for all 802.1X sessions. Dynamic key rotation occurs on key 1, which is the broadcast key. Key 0 is the pairwise key. It is automatically generated by the AP.
`static-wep`	Support client stations using static WEP keys.
`wpa`	This option enables support for wireless users with WPA client software.
`psk`	Enables support for a preshared key:
`radius`	The AP obtains the MPPE key from the RADIUS server. This is a dynamic key that changes each time the user logs in and is authenticated. The MPPE key is used to generate the TKIP keys that encrypt the wireless data stream.
`v1,v2`	Specify which version of WPA to use. None will use both versions (mixed mode).

VLAN interface context

Path: View > Enable > Config > Port-2 interface > VLAN interface
View > Enable > Config > Port-1 interface > VLAN interface
View > Enable > Config > Local mesh > VLAN interface

This context provides commands for configuring Virtual LANs (VLANs). In this context, VLANs can be added or edited.

For example, to create a new VLAN interface named "hongkong" on the LAN port with VLAN id 88, do the following:

CLI(config)# interface lan

CLI(if-lan)# interface vlan 88

CLI(if-vlan)# vlan name hongkong

CLI(if-vlan)# ip address mode dhcp

CLI(if-vlan)# no nat

CLI(if-vlan)# end

CLI(if-lan)#

end

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

`end`

Switches to parent context.

ip address

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

`ip address <ip address>/<mask>`

Sets a static IP address for the VLAN.

Parameters

<address>	IP address.
</mask>	Subnet mask in CIDR format. Specifies the number of bits in the mask.

ip address mode

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

`ip address mode (dhcp | static | none)`

Sets the IP addressing mode for this VLAN interface.

Parameters

`dhcp`	Dynamic host configuration protocol. The DHCP server will automatically assign an address to the AP, which functions as a DHCP client.
`static`	This option enables you to manually assign an IP address to the AP.
`none`	This VLAN does not have an IP address.

vlan name

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

`vlan name <name>`

Change the name of this VLAN interface.

Local mesh context

Path: View > Enable > Config > Local mesh

This context provides commands for configuring local meshes.

end

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

```
end
```

Switches to parent context.

active

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

```
active
```

Activates the local mesh.

```
no active
```

Deactivates the local mesh.

interface

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

```
interface (radio1 | radio2 | radio3)
```

Select the interface to which this local mesh link applies.

```
no interface (radio1 | radio2 | radio3)
```

Select the interface to remove for this local mesh link.

local mesh name

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

```
local mesh name <name>
```

Renames the current local mesh link.

remote mac

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

```
remote mac <address>
```

Sets the MAC address of the remote access point.

```
no remote mac
```

Deletes the MAC address of the remote access point.

Parameters

<address>	MAC address. Specify 6 pairs of hexadecimal numbers separated by colons, with the values a to f in lowercase. For example: 00:00:00:0a:0f:01

security

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

`security`

Enables wireless security.

`no security`

Disables wireless security.

security mode

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

`security mode (wep | tkip | ccmp)`

Set the security mode.

security psk

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

`security psk <secret>`

Sets the PSK secret.

`no security psk`

Clears the PSK secret.

security wep

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

`security wep <key>`

Sets the WEP key.

`no security wep`

Deletes the WEP key.

speed

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

`speed (auto | 1 | 2 | 5.5 | 6 | 9 | 11 | 12 | 18 | 24 | 36 | 48 | 54)`

Sets the speed of the wireless link in Mbps.

interface vlan

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

`interface vlan <id>`

Switches to the specified VLAN interface or create a new VLAN interface with the specified Id.

`no interface vlan <number>`

Removes the specified VLAN interface.

Parameters

<id>	VLAN ID. Range: 1 - 4094.

accept forced links

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

`accept forced links`

May accept master orders for selection.

`no accept forced links`

ignore master orders for selection.

allowed downtime

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

`allowed downtime <number>`

Set the allowed downtime for a connection (or a link) to a peer.

dynamic local mesh

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

`dynamic local mesh`

Use dynamic local mesh.

`no dynamic local mesh`

Use static local mesh.

dynamic mode

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

`dynamic mode (master | alt-master | slave)`

Selects the dynamic operation mode.

initial discovery time

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

`initial discovery time <number>`

Slave: Set the group's initial discovery time in seconds.

mesh id

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

`mesh id <id>`

Set the local mesh group id.

minimum snr

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

`minimum snr <number>`

Slave: Set the group's minimum SNR.

preserve master link

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

```
preserve master link
```

Preserve master link across reboots.

```
no preserve master link
```

Do not preserve master link across reboots.

promiscuous mode

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

```
promiscuous mode
```

Slave: Accept any group.

```
no promiscuous mode
```

Slave: Use only the slave's group.

promiscuous mode startup delay

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

```
promiscuous mode startup delay <number>
```

Set delay in seconds before promiscuous mode starts (if enabled).

snr cost per hop

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

```
snr cost per hop <number>
```

Slave: Set the group's SNR cost per hop.

RADIUS context

Path: View > Enable > Config > RADIUS

This context provides commands for configuring RADIUS profiles.

end

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

```
end
```

Switches to parent context.

radius-server accounting port

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

```
radius-server accounting port <number>
```

Specifies the port to use for RADIUS accounting.

Parameters

<number>	Accounting port number. Range: 1 - 65535.

radius-server alternate hosts

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

```
radius-server alternate hosts
```

Try last answering RADIUS host first.

```
no radius-server alternate hosts
```

Try primary RADIUS host first.

radius-server authentication method

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

```
radius-server authentication method (mschap | chap | mschapv2 | pap | eap-md5)
```

Sets the authentication method to use when communicating with the RADIUS server.

For 802.1x users, the authentication method is always determined by the 802.1x client software and is not controlled by this setting.

If traffic between the AP and the RADIUS server is not protected by a VPN, it is recommended that you use either EAP-MD5 or MSCHAP V2, if supported by your RADIUS Server. (PAP, MSCHAP V1 and CHAP are less secure protocols.)

radius-server authentication port

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

```
radius-server authentication port <number>
```

Specifies the port to use for RADIUS authentication. By default, RADIUS servers use port 1812.

Parameters

<number>	Authentication port number. Range: 1 - 65535

radius-server deadtime

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

`radius-server deadtime <seconds>`

Sets the retry interval for access and accounting requests that time-out.

If no reply is received within this interval, the AP switches between the primary and secondary RADIUS servers (if defined). If a reply is received after the interval expires, it is ignored.

Parameters

<seconds>	Retry interval. Range: 2 - 60 seconds.

radius-server host

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

`radius-server host <primary>[<secondary>]`

Sets the addresses of the primary and secondary RADIUS servers.

Parameters

<primary>	IP address of the primary RADIUS server.
<secondary>	IP address of the secondary RADIUS server.

radius-server key 2

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

`radius-server key <primary>[<secondary>]`

Enter primary and secondary secrets.

Parameters

<primary>	Shared secret for the primary RADIUS server.
<secondary>	Shared secret for the secondary RADIUS server.

radius-server message-authenticator

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

`radius-server message-authenticator`

Include the message authenticator attribute in RADIUS packets.

`no radius-server message-authenticator`

Do not include the message authenticator attribute in RADIUS packets.

radius-server name

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

`radius-server name <name>`

Changes the name of the RADIUS profile.

radius-server nasid

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

`radius-server nasid <id>`

Sets the network access server ID you want to use for the AP.

By default, the serial number of the AP is used. The AP includes the NAS-ID attribute in all packets that it sends to the RADIUS server.

radius-server timeout

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

`radius-server timeout`

Activates RADIUS timeout.

`no radius-server timeout`

Disables RADIUS timeout.

radius-server timeout

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

`radius-server timeout <number>`

Sets the total timeout for RADIUS requests.

`no radius-server timeout`

Disables RADIUS timeout.

IP_QOS context

Path: View > Enable > Config > IP_QOS

This context provides commands for configuring IP QoS profiles.

end

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

`end`

Returns to a previous context.

end-port

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

`end-port <number>`

Specifies the end port to use for this IP QoS profile.

Parameters

<number>	End port number. Range: 0 - 65535

priority

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

`priority <low | medium | high | very-high>`

Sets the priority for this IP QoS profile.

Parameters

<priority>	Available priorities are: low, medium, high and very-high.

profile name

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

`profile name <name>`

Changes the name of the IP QoS profile.

protocol

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

`protocol <number>`

Specifies the protocol ID use for this IP QoS profile.

Parameters

<number>	Protocol number. Range: 0 - 255.

start-port

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

`start-port <number>`

Specifies the start port to use for this IP QoS profile.

Parameters

<number>	Start port number. Range: 0 - 65535

GRE interface context

Path: View > Enable > Config > GRE interface

Details of the GRE interface.

end force

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

`end [force]`

Quits the GRE context.

gre name

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

`gre name <name>`

Renames the current GRE interface.

ip address

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

`ip address <ip address>/<mask>`

Set the local tunnel IP address and mask.

peer ip address

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

`peer ip address <ip address>`

Sets the GRE peer IP address.

remote ip address

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

`remote ip address <ip address>`

Sets the remote tunnel IP address.

Syslog destination context

Path: View > Enable > Config > Syslog destination

This context provides commands for configuring Syslog destinations.

active

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

```
active
```

Enables logging to the current destination.

```
no active
```

Disables logging to the current destination.

logging facility

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

```
logging facility (local0 | local1 | local2 | local3 | local4 | local5 | local6 | local7)
```

Sets the facility that is used when logging messages to a syslog server.

Parameters

<facility>	Available facilities are: local0 - local7.

logging host

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

```
logging host (tcp | udp) <addr> [<number>]
```

Sets the remote address, the connection protocol and port of current syslog remote destination.

logging prefix

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

```
logging prefix <string>
```

Sets the prefix that will be prepended to all syslog messages.

```
no logging prefix
```

Removes the prefix that is prepended to all syslog messages.

name

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

```
name <name>
```

Renames the current syslog destination.

end

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

```
end
```

Switches to parent context.

level

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

```
level
```

Enables filtering of the log file by severity level.

```
no level
```

Disables filtering of the log file by severity level.

level

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

```
level (lower | higher) (debug | info | notice | warning | error | critical |
alert | emergency)
```

Defines the severity of messages that will be logged.

```
no level
```

Disables filtering of the log file by severity level.

Parameters

`debug`	Debug-level messages.
`info`	Informational messages.
`notice`	Normal, but significant condition.
`warning`	Warning conditions.
`error`	Error conditions.
`critical`	Critical conditions.
`alert`	Action must be taken immediately.
`emergency`	System is unusable.

matches

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

```
matches (any | all) filters
```

All three log file filters (message, process, and level) are combined to filter the log according to this setting.

message

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

```
message
```

Enables filtering of the log file message field.

```
no message
```

Disables filtering of the log file message field.

message

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

```
message (matches | notmatches) <regex>
```

Use this filter to include log messages. Use a regular expression to define the match criteria for the log file message field.

```
no message
```

Disables filtering of the log file message field.

process

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

```
process
```

Enables filtering of the log file by process name.

```
no process
```

Disables filtering of the log file by process name.

process

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

```
process (matches | notmatches) <string>
```

Use this filter to include log messages according to their process name.

```
no process
```

Disables filtering of the log file by process name.

SNMP user context

Path: View > Enable > Config > SNMP user

This context provides commands for configuring SNMP user.

access level

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

`access level (read-only | read-write)`

Specifies the access level for this SNMP user.

end

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

`end`

Returns to a previous context.

password

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

`password <password>`

Specifies the password for this SNMP user.

security

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

`security (md5-des | sha-aes)`

Specifies the security for this SNMP user.

user name

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

`user name <name>`

Changes the name of this SNMP user.

SNMP notification receiver context

Path: View > Enable > Config > SNMP notification receiver

This context provides commands for configuring SNMP notification receiver.

community

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

`community <community>`

Specifies the community for this SNMP notification receiver.

end

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

`end`

Returns to a previous context.

port

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

`port <number>`

Specifies the UDP port for this SNMP notification receiver.

receiver

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

`receiver <host>`

Changes the host name of the SNMP notification receiver.

user

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

`user <name>`

Specifies the user for this SNMP notification receiver.

version

Supported on: MSM310 MSM320 MSM335 MSM410 MSM422

`version (1 | 2c | 3)`

Specifies the SNMP version for this SNMP notification receiver.

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